

CLAIMS

1. An object display device, with regard to a product existing in a real space and being assembled by a plurality of components, capable of displaying the component as component object in a virtual space and of displaying an in-process product on an in-process stage of the product by using the component objects, the display device comprising:

object selection means for selecting a component object to be displayed in the virtual space out of the component objects constituting the in-process product object, based on assembly procedure data showing an assembly procedure of the product; and

object display means for displaying the component object selected by the object selection means as a selected component object.

2. The object display device according to claim 1, wherein

the assembly procedure data has role relation data showing a role relation between the components.

3. The object display device according to claim 2, wherein

when the role relation between one component and the other

component is in a relation that one of the one component and the other component either partially or entirely conceals the other one of the components so as to be invisible from outside, with the one component and the other component are assembled, data showing that one of the one component and the other component either partially or entirely conceals the other one of the components so as to be invisible from outside is set in the role relation data related to the one component and the other component, whereby the object selection means is adapted to refer to the role relation data and to select the component object related to the component of covering side out of the one component and the other component.

4. The object display device according to one of claims 2 and 3, comprising role relation data setting support means that supports to urge designation of a setting target component which is a setting target of the role relation data, to determine whether or not the component object corresponding to the setting target component that receives the designation is displayable to the component object corresponding to the other component, and to set either manually or automatically the role relation data on the other component in the setting target component based on a determination result thus obtained.

5. The object display device according to claim 4,

wherein

the role relation data setting support means comprises:

role relation determining data reception means for receiving the designation of the setting target component, which is the setting target of the role relation data, and the designation of time for determining the role relation, as role relation determining data for determining the role relation of the setting target component at the time thus designated;

role relation determination means for determining whether or not the setting target component has a role of covering the other component or being covered by the other component, by determining whether or not the display of the component object corresponding to the setting target component is performable to the component object corresponding to the other component when the component object corresponding to the setting target component and the component object corresponding to the other component are displayed on a screen; and

role relation data setting means for setting the role relation data showing that the setting target component has a role of covering side that covers the other component when a determination result reveals that the display of the component object corresponding to the setting target component is performable to the component object corresponding to the other component, and for setting the role relation data showing that the setting target component has a role of being covered by the

other component when the display of the component object corresponding to the setting target component is not performable to the component object corresponding to the other component.

6. The object display device according to claim 5, wherein

the other component used for determination by the role relation determination means is the component excepting the setting target component, out of all components designated by assembly procedure data corresponding to time shown by the role relation determining data.

7. The object display device according to claim 6, wherein

the role relation data setting support means further comprises:

common role relation calculation means for obtaining a common role relation in each assembly procedure by a calculation method such as AND operation, from the role relation obtained for each assembly procedure, and

when there are plural assembly procedures,

the role relation determination means is adapted to determine the role relation for each assembly procedure;

the common role relation calculation means is adapted to

obtain the common role relation from the role relation for each assembly procedure determined by the role relation determination means; and

the role relation data setting means is adapted to set the common role relation obtained by the logic calculation means as role relation data.

8. The object display device according to one of claims 1, 2, 3, 4, 5, 6, and 7, wherein

the component object is allowed to be designated by component object display data for displaying the component object in the virtual space, as well as by component object identification data capable of identifying the component.

9. The object display device according to claim 8, wherein

the component object identification data has metadata capable of reminding of the component or a prescribed concept regarding the component.

10. The object display device according to claim 9, wherein

the metadata is data obtained by generalizing a name of the component.

11. The object display device according to one of claims 8, 9, and 10, comprising:

selected object identification data display means for displaying component object identification data related to the component object that has been selected by the object selection means.

12. The object display device according to one of claims 8, 9, 10, and 11, comprising:

non-selected object identification data display means for displaying the component object identification data related to the component object that has not been selected by the object selection means.

13. The object display device according to one of claims 8, 9, 10, 11, and 12, wherein

the component object display data is allowed to be communicated on a prescribed communication line, with assembly procedure data accompanied therewith; and

the object selection means is adapted to select an appropriate component object by referring to the assembly procedure data accompanied with the component object display data.

14. The object display device according to one of claims

8, 9, 10, 11, 12, and 13, comprising:

cooperation management means for cooperatively managing the component object display data and the assembly procedure data, wherein

the object selection means is adapted to select the appropriate component object by referring to the assembly procedure data cooperatively managed by the cooperation management means.

15. The object display device according to one of claims 8, 9, 10, 11, 12, 13, and 14, comprising:

display object designation instruction reception means for receiving an instruction for designating the component object arbitrarily displayed in the virtual space, wherein

the object display means is adapted to be capable of displaying the component object designated by the instruction received by the display object designation instruction reception means, together with the selected component object or replacing the selected component object.

16. The object display device according to one of claims 8, 9, 10, 11, 12, 13, 14, and 15, wherein

the component object is adapted to be able to display selectively in a prescribed display mode or a simplified display mode which is more simplified than the prescribed display mode;

and

the object display means is adapted to be capable of displaying the component object that has been selected by the object selection means in the prescribed display mode, and the component object that has not been selected by the object selection means in the simplified display mode.

17. The object display device according to claim 16, comprising:

display mode designation instruction reception means for receiving an instruction to designate the display mode of the component object, wherein

the object display means is adapted to be capable of displaying the component object in the display mode designated by the instruction received by the display mode designation instruction reception means.

18. An object display device, with regard to a product object existing in a virtual space and being assembled by a plurality of component objects, capable of displaying an in-process product on in-process stage of the product object in the virtual space by using the component objects, the object display device comprising:

object selection means for selecting the component object to be displayed in the virtual space, out of the component

objects constituting the in-process product object, based on assembly procedure data showing an assembly procedure of the product object; and

object display means for displaying the component object selected by the object selection means as a selected component object.

19. An object display program having a computer operate, with regard to a product existing in a real space and being assembled by a plurality of components, capable of displaying the component as component object in a virtual space and of displaying an in-process product on an in-process stage of the product by using the component objects, the program causing the computer to function as:

object selection means for selecting the component object to be displayed in the virtual space out of the component objects constituting the in-process object, based on assembly procedure data showing an assembly procedure of the product; and

object display means for displaying in the virtual space the component object selected by the object selection means as a selected component object.

20. An object display program having a computer operate, with regard to a product object existing in a virtual space and being assembled by a plurality of component objects, capable

of displaying an in-process product object on an in-process stage of the product object by using the component objects, the program causing the computer to function as:

object selection means for selecting the component object to be displayed in the virtual space out of the component objects constituting the in-process object, based on assembly procedure data showing an assembly procedure of a product object; and

object display means for displaying the component object selected by the object selection means in the virtual space as a selected component object.